National Institute of Environmental Health Sciences

Tracking deaths related to Hurricane Ike, Texas, 2008

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Abstract:

BACKGROUND: On September 13, 2008, Hurricane Ike, a category 2 storm with maximum sustained winds of 110 mph, made landfall near Galveston, Texas. Ike produced a damaging, destructive, and deadly storm surge across the upper Texas and southwestern Louisiana coasts. Thirty-four Texas counties were declared disaster areas by the Federal Emergency Management Agency; 15 counties were under mandatory evacuation orders. To describe causes of death associated with this hurricane and identify prevention strategies during the response and recovery phases, the Texas Department of State Health Services (DSHS) monitored mortality data in 44 counties throughout the state. This report summarizes Ike-related deaths reported by Texas medical examiners, justices of the peace (coroners), forensic centers, public health officials, and hospitals. METHODS: Based on the Centers for Disease Control and Prevention (CDC) disaster-related mortality surveillance form, DSHS developed a state-specific 1-page form and collected (optimally daily) data on demographic, date and place of death, and cause and circumstance of deaths. A case was defined as any death that was directly or indirectly related to Ike among evacuees, residents, nonresidents, or rescue personnel in the declared disaster counties, counties along the Texas Gulf coast or counties known to have evacuation shelters occurring September 8, 2008, through October 13, 2008. Analyzed data were shared with the state emergency operation center and the CDC on a daily basis. RESULTS: The surveillance identified 74 deaths in Texas as directly (10 [14%]), indirectly (49 [66%]), or possibly (15 [20%]) related to Ike. The majority of deaths (nEuro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)57) were reported by medical examiners. Deaths occurred in 16 counties of the 44 counties covered by the surveillance. The majority of deaths occurred in Harris and Galveston (28 [38%] and 17 [23%]), respectively. The deceased ranged in age from younger than 1 year to 85 years, with an average age of 46 years (median 50 years); 70% were male. Of the 74 deaths, 47 (64%) resulted from injuries, 23 (31%) from illnesses, and 4 (5%) were undetermined. Among the injuries, carbon monoxide poisoning (13 [18%]) and drowning (8 [11%]) were the leading causes of injury-related deaths. Cardiovascular failure (12 [16%]) was the leading cause of illness-related deaths. CONCLUSIONS: Defining the relation of death to hurricane using an active mortality surveillance system is possible. The active mortality surveillance form used in Ike provided valuable daily information to DSHS, state emergency management officials, and the CDC regarding the characteristics of deaths in the state. Most of the Ike-related deaths were caused by injury (direct and indirectly related) such as carbon monoxide poisonings and drowning and may have been preventable by educating the public.

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Resource Description

Exposure : ☒

weather or climate related pathway by which climate change affects health

Extreme Weather Event

Extreme Weather Event: Hurricanes/Cyclones

Geographic Feature: ☒

resource focuses on specific type of geography

Ocean/Coastal

Geographic Location: ☒

resource focuses on specific location

United States

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Injury

Mitigation/Adaptation: ☒

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☒

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content